Ordering number : ENA0842A

TF252TH

N-Channel JFET
20V, 140 to 350μA, 1.4mS, VTFP

ON Semiconductor®
http://onsemi.com

Features

- High gain : G_V=1.0dB typ (V_{CC}=2V, R_L=2.2kΩ, Cin=5pF, V_{IN}=10mV, f=1kHz)
- Ultrasmall package facilitates miniaturization in end products
- Best suited for use in electret condenser microphone for audio equipments and telephones
- Excellent voltage characteristics
- Excellent transient characteristics
- Adoption of FBET process
- Halogen free compliance

Specifications

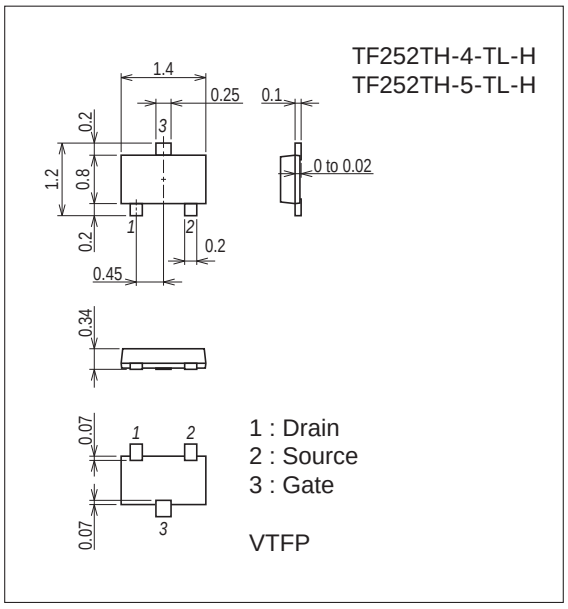
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	V_{GDO}		−20	V
Gate Current	I_G		10	mA
Drain Current	I_D		1	mA
Allowable Power Dissipation	P_D		100	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

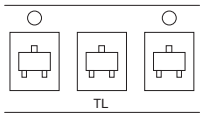
unit : mm (typ)
7031A-001



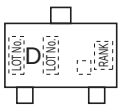
Product & Package Information

- Package : VTFP
- JEITA, JEDEC : SC-106A
- Minimum Packing Quantity : 8,000 pcs./reel

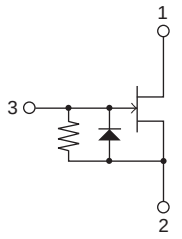
Packing Type: TL



Marking



Electrical Connection



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Electrical Characteristics at Ta=25°C

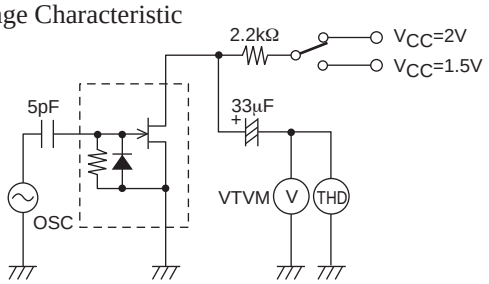
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDO}$	I_G=−100μA	−20			V
Cutoff Voltage	V_{GS}(off)	V_{DS}=2V, I_D=1μA	−0.1	−0.4	−1.0	V
Drain Current	I_{DSS}	V_{DS}=2V, V_{GS}=0V	140*		350*	μA
Forward Transfer Admittance	| yfs |	V_{DS}=2V, V_{GS}=0V, f=1kHz	0.8	1.4		mS
Input Capacitance	Ciss	V_{DS}=2V, V_{GS}=0V, f=1MHz		3.1		pF
Reverse Transfer Capacitance	Crss			0.95		pF
[Ta=25°C, V_{CC}=2.0V, R_L=2.2kΩ, Cin=5pF, See specified Test Circuit.]						
Voltage Gain	G_V	V_{IN}=10mV, f=1kHz		1.0		dB
Reduced Voltage Characteristic	ΔG_{VV}	V_{IN}=10mV, f=1kHz, V_{CC}=2.0V → 1.5V		−0.6	−2.0	dB
Frequency Characteristic	ΔGvf	f=1kHz to 110Hz			−1.0	dB
Total Harmonic Distortion	THD	V_{IN}=30mV, f=1kHz		0.65		%
Output Noise Voltage	V_{NO}	V_{IN}=0V, A curve		−106	−102	dB

* : The TF252TH is classified by I_{DSS} as follows : (unit : μA)

Rank	4	5
I_{DSS}	140 to 240	210 to 350

Test Circuit

Voltage gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic



Ordering Information

Device	Package	Shipping	memo
TF252TH-4-TL-H	VTFP	8,000pcs./reel	Pb Free and Halogen Free
TF252TH-5-TL-H	VTFP	8,000pcs./reel	

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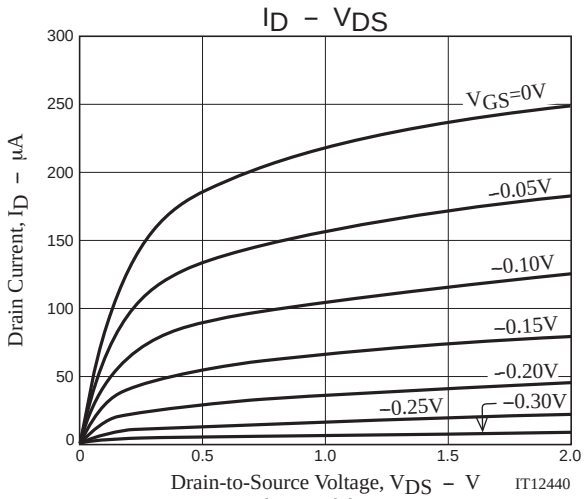

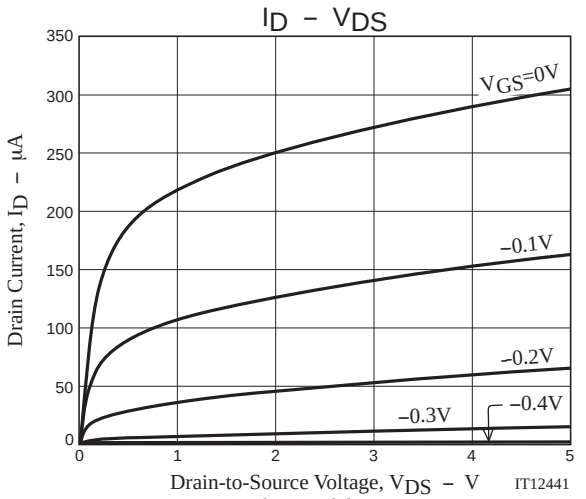

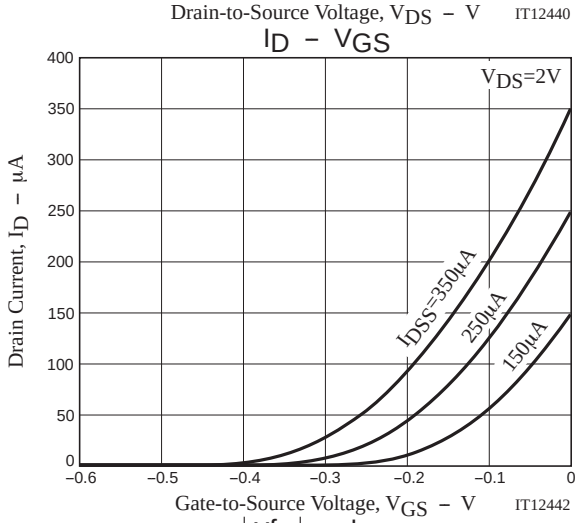

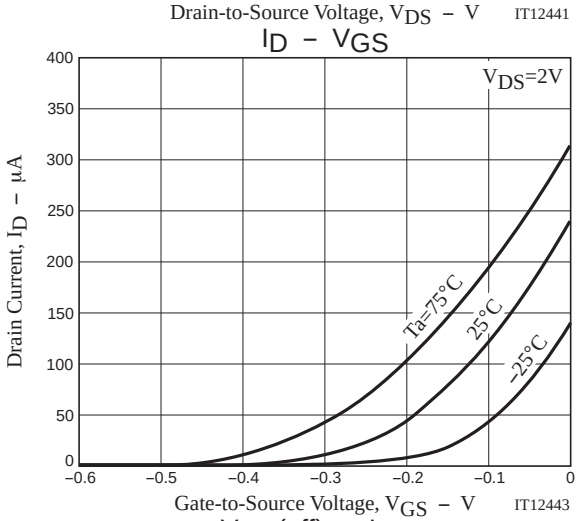

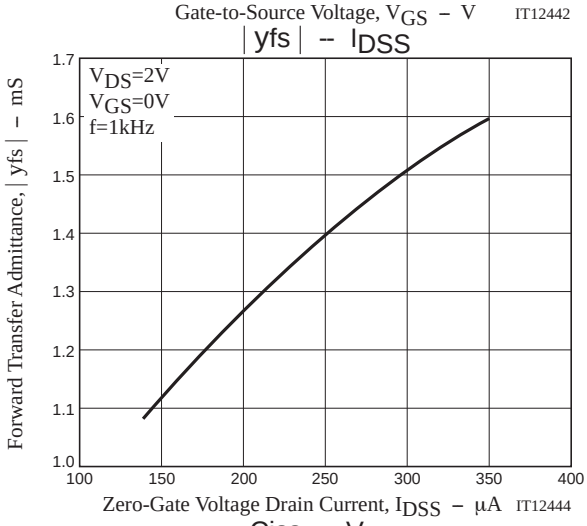

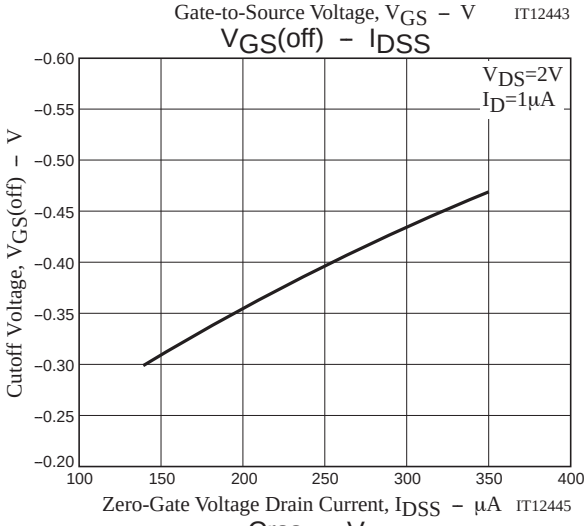

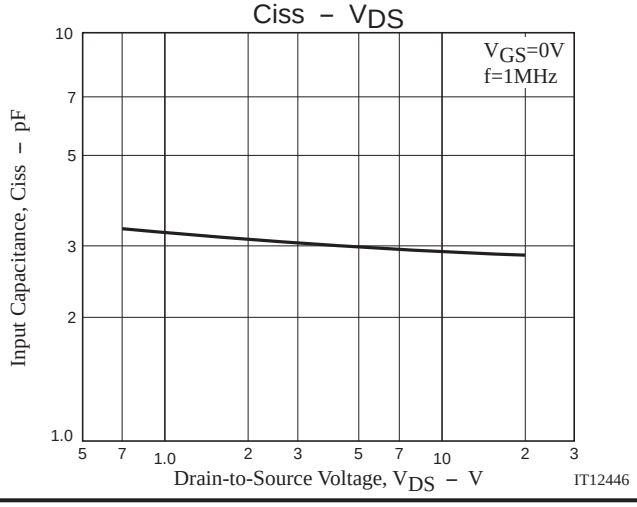

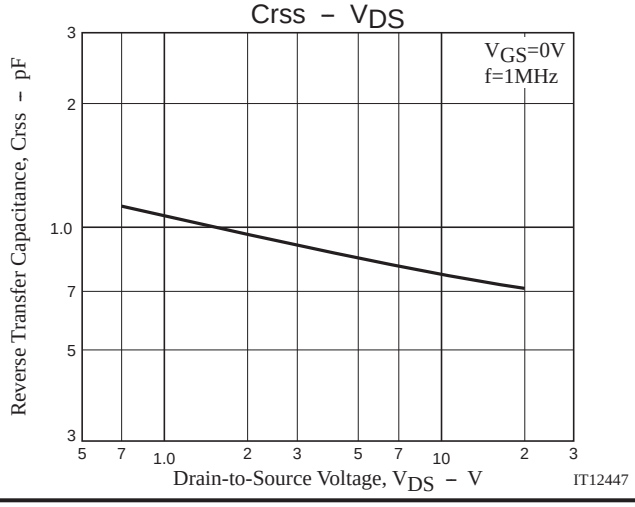

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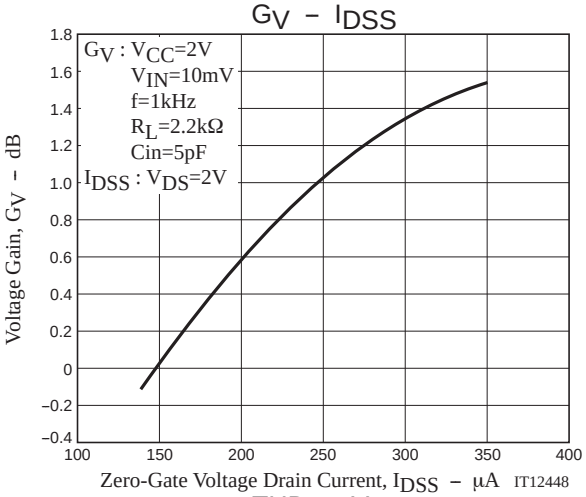
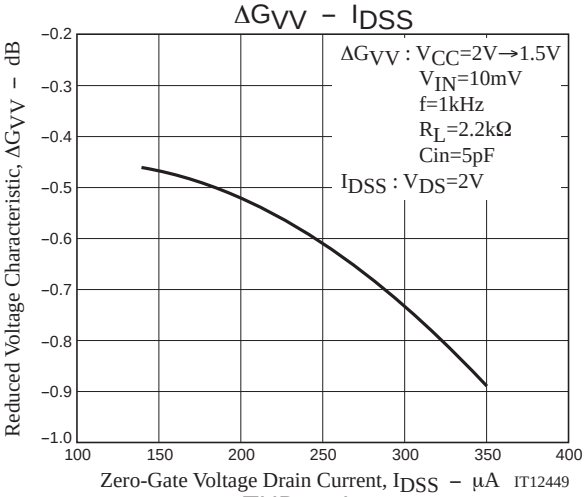
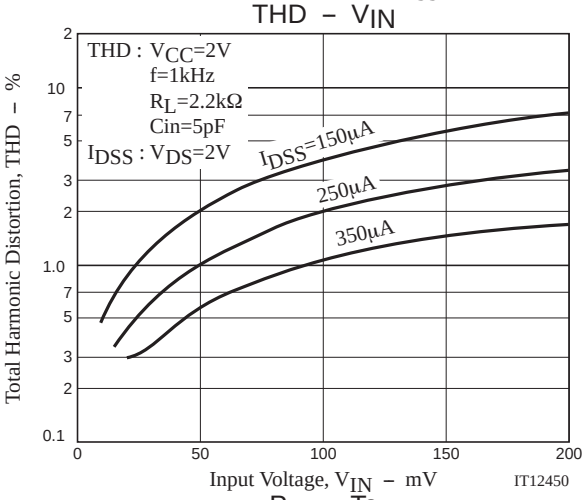
G_V – I_{DSS}



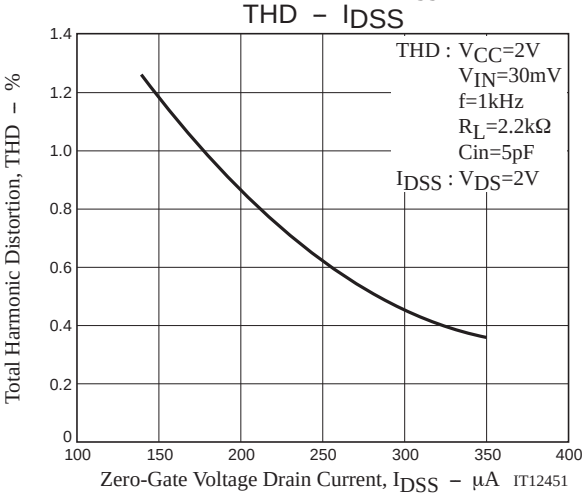
ΔG_{VV} – I_{DSS}



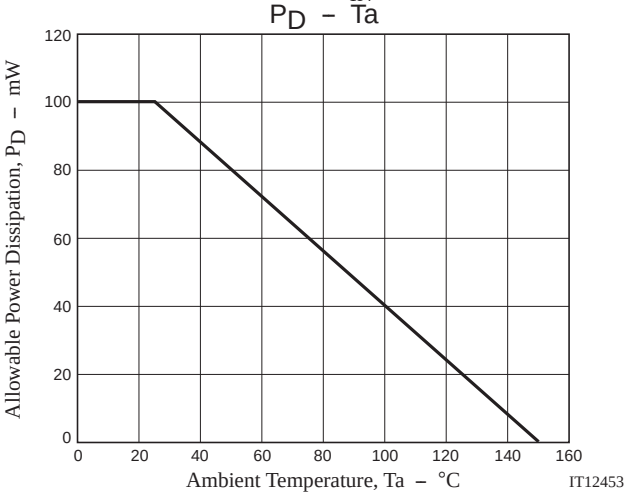
THD – V_{IN}



THD – I_{DSS}



P_D – Ta



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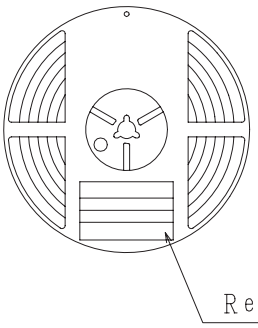
Taping Specification

TF252TH-4-TL-H, TF252TH-5-TL-H

1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
VTFP	VSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

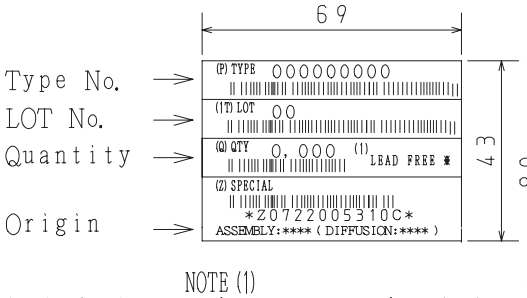
Packing method



Reel label

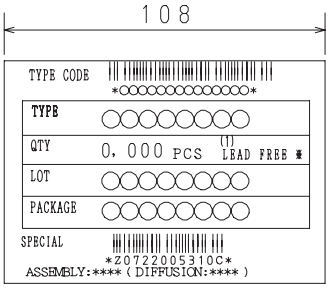
Reel label, Inner box label

(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

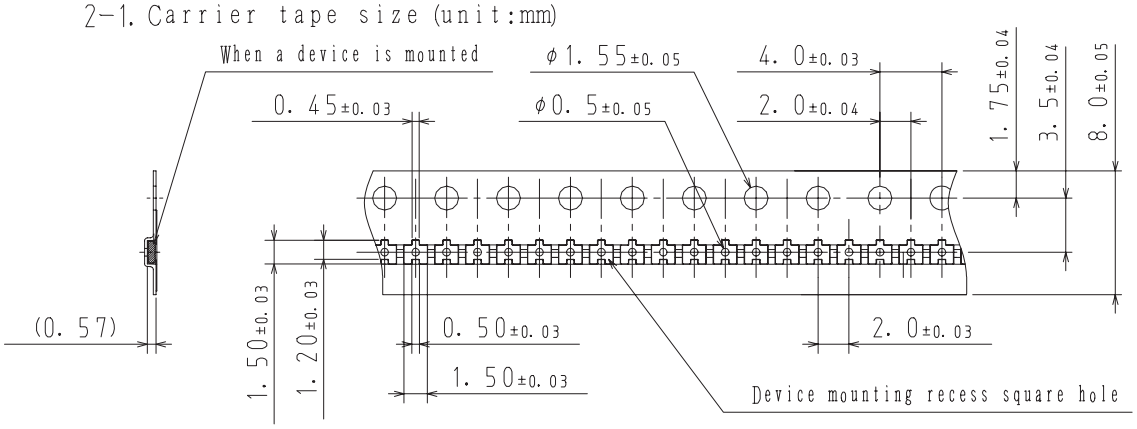


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

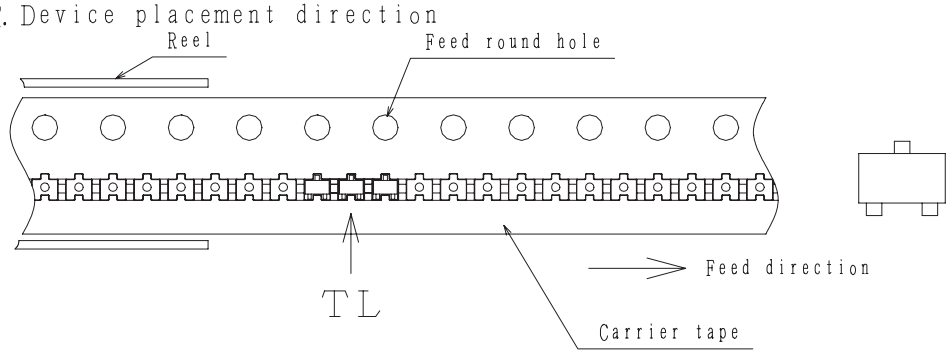
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction



Those with oen electrode terminal on the feed hole side……TL

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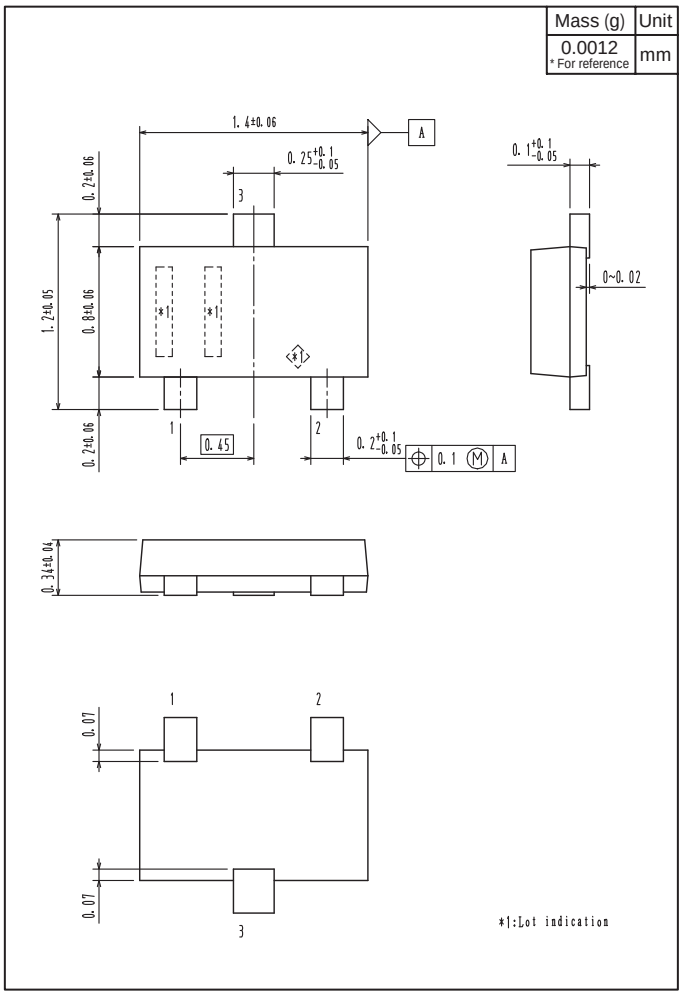
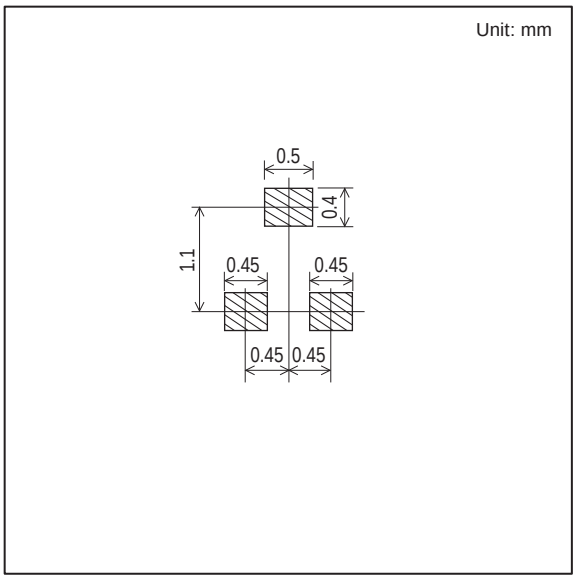
Outline Drawing

TF252TH-4-TL-H, TF252TH-5-TL-H



Land Pattern Example



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